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| 09/395,254      | 09/13/1999  | RUBEN P. MADRID      | TI-20922.1          | 5721             |

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EXAMINER

SHORTSLE, KEVIN P

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1734

DATE MAILED: 02/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |   |  |
|------------------------------|--------------------------------------|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/395,254 | <b>Applicant(s)</b><br>MADRID, RUBEN P. |  |
|                              | <b>Examiner</b><br>Kevin P. Shortsle | <b>Art Unit</b><br>1734                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,6 and 21-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,21,22 and 24-33 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                            | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)        | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Priority***

1. In the amendment filed November 13, 2001 (Paper No. 7) the cross reference to related applications includes a provisional application unrelated to the instant application. A preliminary search of the serial number of the provisional application resulted in an application that appeared to be different and unrelated to the instant invention. Furthermore, the parent application does not claim priority to any applications, provisional, non-provisional or foreign. Also, it is noted the current status of the parent application must be included, i.e. now U.S. Patent No. 6,006,981.

### ***Claim Objections***

2. Claims 21 and 29 are objected to because of the following informalities: in the last line of each claim a typographical error is assumed to have occurred, "aprat" should be "apart". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 4, 6, 26-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention. Claims 2, 4 and 6 recite the limitation "the apparatus" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Regarding claims 26 and 29, the body of the claim is inconsistent with the preamble, which recites an electrical connection. The body of the claim does not recite that the components and the wirefilm are electrically connected, and only recites that components could be electrically connected by a wirefilm. It is assumed for the purpose of examination that the wirefilm electrically connects the components. It is also noted that in order to correct the claims and positively recite a wirefilm "electrically interconnecting bonding sites" instead of the intended use recitation that is currently drafted in the claims.

### ***Claim Rejections - 35 USC § 102***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-2 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Laakso et al. (USPN 4,650,545). Laakso et al. disclose a wirefilm comprising a substantially planarizable film and a plurality of wire strands, each wire strand coupled to the film according to the relative positions of a first component and a second component, the first end of each wire strand operable to contact a first bonding site and the second end of each wire strand operable to contact a second bonding site to electrically interconnect the first component and the second component, and at least a

portion of each wire strand between the first end and the second end is embedded in the film (See Col. 1, lines 26 – 30, 59 – Col. 2, line 3, Col. 2, lines 31 - 37 and Figs. 1 and 4, items 10, 12, 14, 16, 20 and 24).

Regarding claim 2, the film comprises a plastic polymer (See Col. 1, line 59).

Regarding claim 26, an electrical connection is disclosed that comprises a first component and a second component having first and second bonding sites, respectively, and a wirefilm comprising a substantially planarizable film and a plurality of wire strands, each wire strand coupled to the film according to the relative positions of a first component and a second component, the first end of each wire strand operable to contact a first bonding site and the second end of each wire strand operable to contact a second bonding site to electrically interconnect the first component and the second component, and at least a portion of each wire strand between the first end and the second end is embedded in the film (See Col. 1, lines 26 – 30, 59 – Col. 2, line 3, Col. 2, lines 31 - 37 and Figs. 1 and 4, items 10, 12, 14, 16, 20 and 24).

7. Claims 21-22, 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamasaki et al. (USPN 5,554,885). Yamasaki et al. discloses a wirefilm comprising a substantially planarizable film and a plurality of wire strands, each wire strand coupled to the film according to the relative positions of a first component and a second component, the first end of each wire strand operable to contact a first bonding site and the second end of each wire strand operable to contact a second bonding site to electrically interconnect the first component and the second component, and each wire

strand comprising a loop portion relaxed and located entirely between the first end and the second end, the loop portion spaced apart from the film (See Col. 5, lines 21 - 30 Figs. 1 - 3, 9 -12, items 10, 20, 30, 32, 32, 34 and 40).

Regarding claim 29, an electrical connection is disclosed that comprises a first component and a second component having first and second bonding sites, respectively, and a wirefilm comprising a substantially planarizable film and a plurality of wire strands, each wire strand coupled to the film according to the relative positions of a first component and a second component, the first end of each wire strand operable to contact a first bonding site and the second end of each wire strand operable to contact a second bonding site to electrically interconnect the first component and the second component, and each wire strand comprising a loop portion relaxed and located entirely between the first end and the second end, the loop portion spaced apart from the film (See Col. 5, lines 21 - 30 Figs. 1 - 3, 9 -12, items 10, 20, 30, 32, 32, 34 and 40).

Regarding claims 22 and 30, the film comprises a plastic polymer (See Col. 5, lines 65-66).

***Claim Rejections - 35 USC § 103***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 4 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laakso et al. as applied to claims 1 and 26 above, and further in view of Nakano et al.

(USPN 4,857,671). Laakso et al. is silent to a means by which the wirefilm is coupled to the first and second component, but suggest any conventional techniques may be used (See Col. 2, lines 34-37). One in the art would appreciate an adhesive is a conventional means to couple wirefilms to first and second components, which provides a low pressure and temperature coupling means that prevents damage of the wirefilm, first and/or second components. It is well known and conventional to provide an adhesive layer that couples a wirefilm to first and second components as shown, for example, by Nakano et al. (See Col. 1, lines 13-17, 58-61, Col. 2, lines 36-41, Col. 3, lines 7-17, 35-38, Col. 4, lines 62-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an adhesive layer in Laakso et al. that couples the wirefilm to the first and second component as shown by Nakano et al. in order to prevent damage to the wirefilm, first component and/or the second component.

10. Claims 24 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki et al. as applied to claims 21 and 29 above, and further in view of Nakano et al. Yamasaki et al. suggests using high temperatures and pressures to couple the wirefilm to the first and second components, but is silent to an adhesive layer that couples the wirefilm to the components. One in the art would appreciate such high temperatures and pressures may damage the wirefilm and/or components. It is well known and conventional in the art to provide an adhesive layer that couples the wirefilm to the first and second components and prevents damage to the wirefilm and components due to high temperatures and pressures as shown, for example, by

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Nakano et al. (See Col. 1, lines 13-17, 58-61, Col. 2, lines 36-41, Col. 3, lines 7-17, 35-38, Col. 4, lines 62-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an adhesive layer in Yamasaki et al. that couples the wirefilm to the first and second component as shown by Nakano et al. in order to prevent damage to the wirefilm, first component and/or the second component.

11. Claims 6 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laakso et al. as applied to claims 1 and 26 above, and further in view of Ettre et al. (USPN 3,655,496). Laakso et al. is silent to the wirefilm mounted on a continuous and automatic film tape carrier. One in the art would appreciate a film tape carrier used in automatic processes achieves a higher production rate than manual processes. It is well known and conventional to provide wirefilms on film tape carriers in automatic processes as shown, for example, by Ettre et al. (See Col. 5, line 40 – Col. 6, line 8, Col. 3, lines 21 – 33 and Figs. 1-2, items 10, 12, 14, 16, 18, 22, 24, 30, 36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the wirefilm of Laakso et al. in the film tape carrier of Ettre et al. to continuously and automatically provide wirefilms to substrates, thus achieving higher production and efficiency than manual processes. It is noted, the film tape carrier of Ettre et al. is removable coupled to the wirefilm (See Fig. 2, items 22, 12 and 14).

12. Claims 25 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki et al. as applied to claims 21 and 29 above, and further in view of Ettre



et al. Yamasaki et al. suggest a continuous film having wire strands coupled thereto, but is silent to a film tape carrier removably coupled to the film (See Col. 7, lines 11-24 and Fig. 5, items 10 and 70). One in the art would appreciate punching or cutting the wirefilm, i.e. portion of the film having wire strands coupled thereto, and components from the rest of the film in order to produce a wirefilm coupled to the first and second components (See Col. 1, lines 30-33, Col. 7, lines 40-42 and Figs. 5, 7-12, items 10, 70, 30, 32, 34, 40). Punching or cutting causes undue stress and may damage the wirefilms or components. One in the art would further appreciate that by providing a film tape carrier removably coupled to the film alleviates the need for punching or severing and therefore eliminates stress and damage of the wirefilm or components. It is well known and conventional in the art to provide a film tape carrier coupled to the film as shown, for example, Ettre et al. (See Col. 1, lines 18-20, Col. 5, line 40 – Col. 6, line 8, Col. 3, lines 21 – 33 and Figs. 1-2, items 10, 12, 14, 16, 18, 22, 24, 30, 36). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide Yamasaki et al. with a film tape carrier removably coupled to the film in order to eliminate stress and damage to the wirefilm or components caused by punching or cutting.

### ***Response to Arguments***

13. Applicant's arguments filed November 13, 2001 have been fully considered but they are not persuasive. Applicant has argued that Nakano et al. does not teach or suggest the limitations of claim 4 and points to Fig. 3a, item 21 of the instant application

as an example of what is claimed. Nakano et al. teach the use of an adhesive layer to couple each wire strand to the bonding sites of each component, which therefore couples the wirefilm to the first and second components. The wirefilm as claimed and disclosed by Nakano et al. includes the wire strands, and therefore Nakano et al. meets the claim.

Applicant has also argued that Laakso et al. does not teach the subject matter of cancelled claim 3. On the contrary, the Examiner notes the positive recitation of the wire strands embedded in the film (See Laakso et al., Col. 1, lines 26-30 and Col. 2, lines 2-3).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the loop relaxed entirely between the first and second ends) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It is further noted that the claim requires the loop portion be relaxed and located entirely between the first and second ends.

Applicant has argued that the portion of the wire strand relied upon in Yamasaki et al. for teaching a loop would not be considered a loop but for the reference to Applicant's disclosure. However, Applicant has not defined the loop in such a way to exclude the loop of Yamasaki et al. Applicant states the wire strand may be slightly looped or relaxed and depicts a slightly curved wire strand (See spec. page 10, lines 18-19 and Fig. 3A, item 14). These terms are synonymous as defined by Applicant, and

a wire strand that is relaxed must also be slightly looped. Likewise, Yamasaki et al. disclose a wire strand that is relaxed between its ends, and therefore is slightly looped, or alternatively, Yamasaki et al. disclose a wire strand that is slightly looped, and therefore is relaxed.

Applicant has argued that no combination of references teaches or suggests that the film comprise a plastic polymer. However, Yamasaki et al., which is applied to newly added claim 21, does teach a polyimide film. It is noted that Applicant's specification defines polyimide as a plastic polymer (See spec. page 7, lines 22-23).

#### ***Allowable Subject Matter***

14. Claim 23 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Claim 31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter: the prior art made of record does not teach or suggest the combination of at least a portion of each wire strand between the first and second ends embedded in the

film, and each wire strand comprising a loop portion relaxed and located entirely between the first and second ends and spaced apart from the film.

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin P. Shortsle whose telephone number is 703-308-8193. The examiner can normally be reached on M-F, 8-4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 703-308-3853. The fax phone

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numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



K. P. Shortsle  
February 7, 2002



RICHARD CRISPINO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700